CLAIMS

1. Method for improving the functional properties of globular proteins, comprising the steps of:

a) providing a solution of one or more globular proteins, in which solution the protein is at least partially aggregated in fibrils; and

b) performing one or more of the following steps in random order:

i) adjusting the pH of the solution to about neutral;

ii) increasing the salt concentration in the solution;

iii) concentrating the solution;

iv) changing the solvent quality of the solution.

2. Method as claimed in claim 1, wherein the fibril-containing solution of the one or more globular proteins is provided by heating a solution of the one or more proteins above room temperature, preferably at a temperature between 50 and 100°C, at a pH between 0.5 and 4, preferably between 0.5 and 3.

3. Method as claimed in claim 2, wherein the solution is heated during a period of at least 10 minutes, preferably at least 1 hour, more preferably at least 6 hours, even more preferably at least 8 hours.

4. Method as claimed in any one of the claims 2 and 3, wherein the solution is cooled before performing one or more of steps i) to iv).

5. Method as claimed in claim 4, wherein the solution is cooled to a temperature between denaturation

temperature and 20°C, preferably between denaturation temperature and 5°C.

6. Method as claimed in any one of the claims 2-5, wherein the heating is performed at a pH below 2.8, preferably below 2.5, more preferably below 2.2.

7. Method as claimed in claim 1, wherein the fibril-containing solution of the one or more globular proteins is provided by adding a denaturing agent to the solution.

8. Method as claimed in claim 7, wherein the denaturing agent is a hydrotropic or chaotropic agent.

9. Method as claimed in claim 7, wherein the denaturing agent is selected from the group consisting of ureum, guanidinium chloride, alcohols, such as methanol, ethanol, propanol, butanol, trifluorethanol.

10. Method as claimed in any one of the claims 3-5, wherein the solution has a pH of 0.5-14.

11. Method as claimed in any one of the claims 2-10, wherein the globular protein is a protein that is substantially non-denatured and is capable of being thermally denatured at a temperature at or above the denaturation temperature of the protein or capable of being chemically denatured.

12. Method as claimed in any one of the claims 2-11, further comprising the step of adding already formed fibrils to the solution prior to production of the fibril-containing solution.

13. Method as claimed in claim 12, wherein the already formed fibrils are obtainable by the method as claimed in any one of the claims 2-11.

14. Method as claimed in claim 12 or 13, wherein the amount of already formed fibrils based on the total amount of protein is more than 0 and less than 90%, preferably

between 10 and 80%, more preferably between 20 and 70%, even more preferably between 30 and 60%.

15. Method as claimed in any one of the claims 1-14, wherein the pH is increased to a value between 3.9 and 9, preferably to about neutral pH.

16. Method as claimed in any one of the claims 1-14, wherein the salt concentration is increased to a maximum of 0.2M, preferably to 0.1M.

17. Method as claimed in claim 16, wherein the salt used for increasing the salt concentration is the salt of a divalent ion, preferably calcium.

18. Method as claimed in any one of the claims 1-17, wherein step i) is performed prior to step ii).

19. Method as claimed in any one of the claims 1-18, wherein the solvent quality of the solution is changed by removing the denaturing agent.

20. Method as claimed in any one of the claims 1-19, further comprising the step of drying the solution to obtain a dry product.

21. Method as claimed in claim 20, wherein the drying comprises spray drying.

22. Method as claimed in any one of claims 20-21, wherein the dry product is a powder.

23. Method as claimed in claim 1-22, wherein the globular protein is selected from the group consisting of whey proteins, egg albumins, blood globulins, soy proteins, wheat proteins, in particular prolamines, potato proteins, pea proteins.

24. Method as claimed in claim 23, wherein the globular protein is a whey protein isolate, a whey protein concentrate, and preferably a whey protein concentrate enriched in β-lactoglobulin.

25. Method as claimed in claim 24, wherein the globular protein is the whey protein isolate Bipro™.

26. Method as claimed in any one of the claims 24 and 25, wherein the globular protein is β-lactoglobulin.

27. Protein additive based on a system of one or more proteins that are at least partially aggregated in fibrils, characterized in that the protein additive has improved functional properties as compared to a similar protein additive based on a system of the same one or more proteins in the same concentration in which the proteins are not aggregated in fibrils.

28. Protein additive as claimed in claim 27, wherein the functional properties are one or more of the following: foaming properties, thickening properties, gelling properties and emulsifying properties.

29. Protein additive obtainable by the method as claimed in any one of the claims 1-26.

30. Protein additive as claimed in claim 27 or 28 obtainable by the method as claimed in any one of the claims 1-26.

31. Protein additive as claimed in claim 27 or 28 in dry form obtainable by the method as claimed in any one of the claims 20-26.

32. Protein additive as claimed in any one of the claims 27-31 for use as a stabilizer of foams, dispersions and emulsions.

33. Protein additive as claimed in any one of the claims 27-31 for use in dairy products.

34. Protein additive as claimed in any one of the claims 27-31 for use in meat products.

35. Protein additive as claimed in any one of the claims 27-31 for use in paints.

36. Protein additive as claimed in any one of the claims 27-31 for use in toothpastes, cosmetics, deodorants.

37. Dairy product comprising the protein additive as claimed in any one of the claims 27-31.

38. Meat product comprising the protein additive as claimed in any one of the claims 27-31.

39. Paint comprising the protein additive as claimed in any one of the claims 27-31.

40. Toothpaste comprising the protein additive as claimed in any one of the claims 27-31.

41. Cosmetic comprising the protein additive as claimed in any one of the claims 27-31.

42. Deodorant comprising the protein additive as claimed in any one of the claims 27-31.

43. Protein composition comprising one or more particles having texturizing properties, wherein the protein molecules are aggregated into fibrils.

44. Protein composition as claimed in claim 43, wherein the texturizing properties comprise the ability to promote or modify the viscosity or gelling ability of a product containing the composition.

45. Protein composition as claimed in any one of the claims 43 and 44, wherein the fibrils have an aspect ratio, which is defined as the ratio between length and width or length and height or length and diameter, of 5 or higher.

46. Protein composition as claimed in any one of the claims 43-45, wherein the length of the fibrils is preferably equal to or above 100Å and equal to or below 1 mm, preferably below 100 µm.